

# **2004 Fire Season Assessment for the Northwest Geographic Area**

*(Final Version)*



Photo – 2003 Davis Lake Fire (Sean Reed – Deschutes NF)

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## Executive Summary

The following report is the 2004 Northwest Fire Season Severity Assessment based upon seasonal precipitation patterns, snowpack data, drought, snowmelt dates, fire danger indices, fuel moisture information and long-range weather forecasts for the summer and fall. The potential severity of the fire season is determined using statistical techniques that correlate weather, fuel moisture, and fire danger information with historical fire and resource demand records.

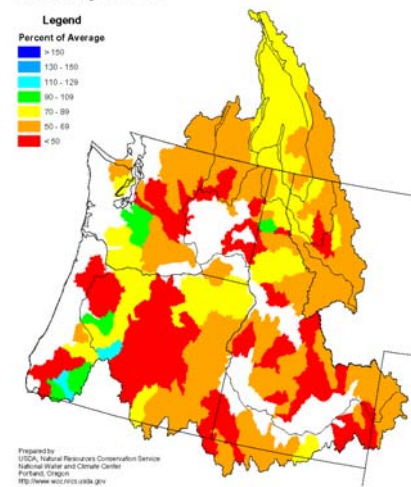
Washington and Oregon experienced cool, wet weather through much of the winter. The latter part of December and the first part of January were particularly cold and wet. Heavy snow and freezing rain fell in Puget Sound and the Willamette Valley, areas west of the Cascades that normally do not see much snow. However, February and March turned warmer and drier than usual. Thus, the winter of 2003-2004 can best be described as highly variable in the Pacific Northwest due to large swings in weather patterns.

Although portions of southern and eastern Oregon reported above-normal November through March precipitation, most of the Northwest received near-average amounts. The driest locations extended across northern and eastern Washington into northeastern Oregon, where winter moisture was only 75-85% of normal.

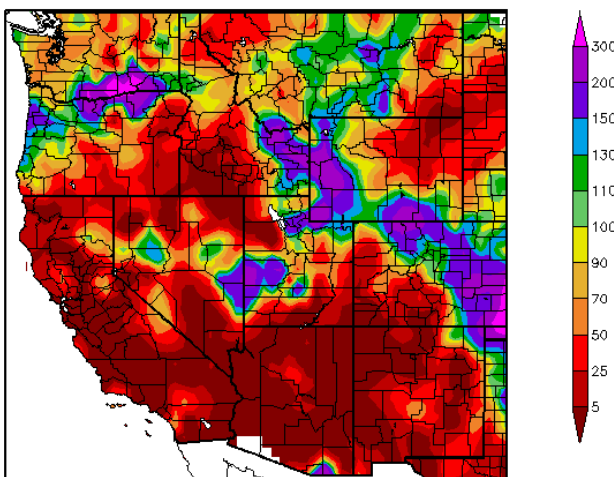
Mountain snowpacks were also above normal throughout much of the winter (except in north central Washington), only to plunge dramatically in March and April. Normally, mountain snowpacks peak around April 1 and gradually melt through the middle of June. However, the snowpack peaked the first part of March, three weeks to a month earlier than usual. As a result, the April 1 Washington and Oregon snowpacks were only 88% of normal. A number of river basins in eastern Washington and northeastern Oregon were as low as 70% of normal.

Warm, dry April weather further depleted the snowpack to 55-65% of average by May 1, with some basins in eastern Oregon

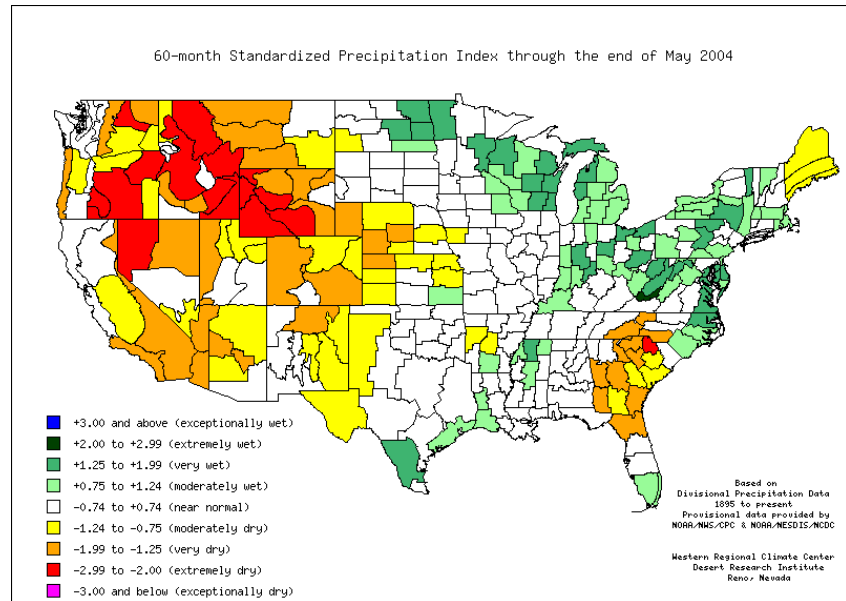
Mountain Snowpack  
as of May 1, 2004



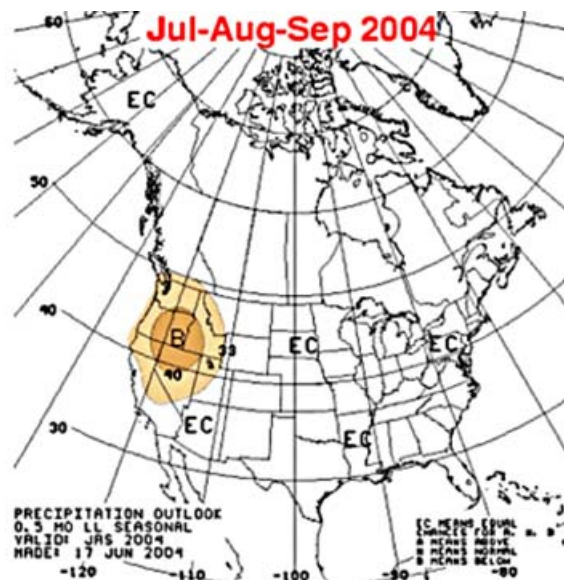
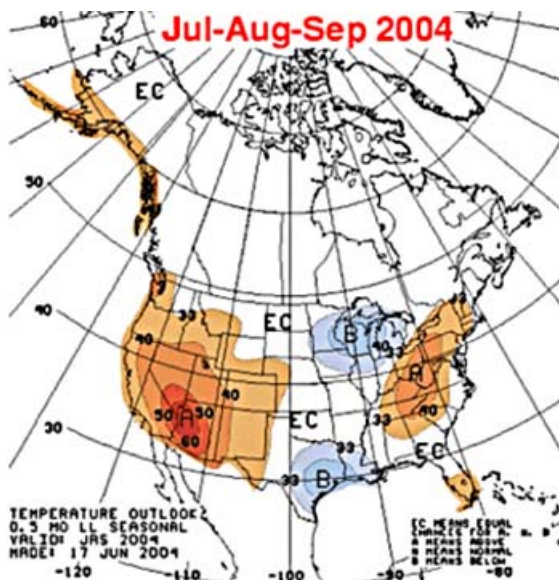
Percent of Normal Precipitation (%)  
6/1/2004 - 6/23/2004



Drought is also a good predictor of active fire seasons because it lowers the moisture content of both the live and dead fuels, making them more flammable. Long-term drought can also adversely affect forest health by stressing trees and increasing disease and insect infestation. Rainfall deficit, over the past five years, has most of eastern Oregon and eastern Washington classified as “very dry to extremely dry” by the Standardized Precipitation Index.



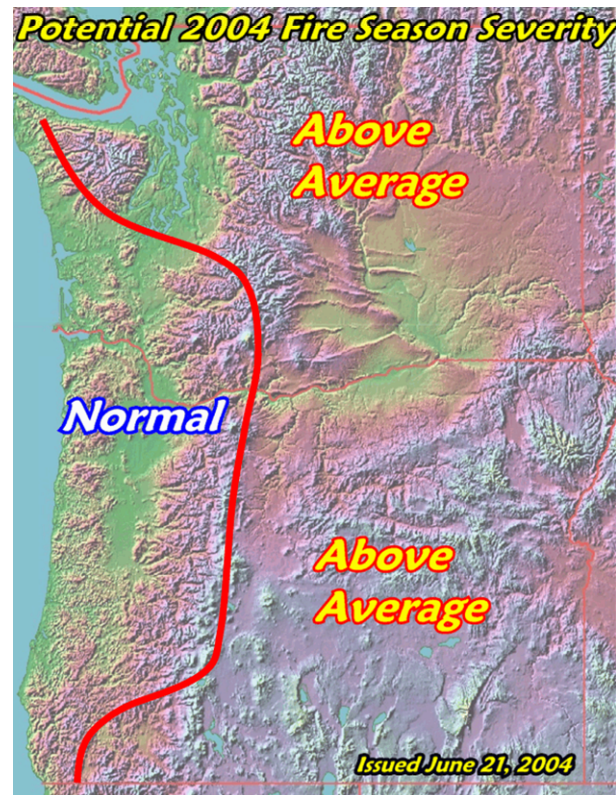
Last year's El Niño conditions (unusually warm water in the central Pacific Ocean) ended and Neutral conditions (near normal sea surface temperature) are forecast to persist through the summer. Long-range weather forecasts are based in part upon continuation of Neutral conditions in the central Pacific. The forecast for July through September is for warmer-and drier-than-usual weather throughout Washington and Oregon. This is in agreement with a recent trend toward warmer and drier summers in the Pacific Northwest that began in the mid-1980s. The five-year drought is expected to continue in eastern Oregon and eastern Washington, with drought conditions expanding into western Washington and northwestern Oregon.





**Fire Season Assessment:** Weather trends and fuel moisture indicators correlate very well with past fire seasons in the Northwest and are the basis for this year's fire season severity assessment. The 2004 outlook calls for an **ABOVE AVERAGE** fire season in eastern and northwestern Washington and in eastern and southwestern Oregon (see map) due to these factors:

- Continued long-term drought (5 years) in eastern Oregon and eastern Washington
- A drier-than-normal winter in eastern Washington and in extreme north-eastern Oregon
- Below-normal April 1 snowpack
- A warmer and drier-than-normal March and April
- A rapid and earlier-than-usual snowmelt
- A drier than normal June in most areas
- Multiple rangeland grass crops in eastern Oregon and eastern Washington
- Near-to above-average fire danger indices (late June)
- Long-range forecasts and historical records that favor a drier-than-normal summer
- Two to three episodes of dry lightning that normally occur during the summer



#### **Management implications for an ABOVE-AVERAGE fire season:**

- An elevated risk of long-duration timber fires in eastern Washington and eastern Oregon, **especially from Wenatchee/Okanogan southward along the east slopes of the Cascades into the Klamath Falls/Lakeview area**
- An increased threat of extreme fire behavior conditions (i.e. crown fires, long-range spotting, plume dominated fires)
- More and larger range fires than in 2003
- An increased threat to public and firefighter safety during critical fire weather and extreme fire behavior conditions
- A higher-than-normal demand for resources of all types (crews, engines, helicopters)
- An active fire season in multiple areas of the western United States, resulting in stiff competition for resources

With any fire season assessment, the occurrence of dry lightning is always the wild card. The amount and location of dry lightning (or the lack thereof) can rapidly change the character of the fire season. The 2004 fire season assessment is based upon a normal amount (2-3 significant episodes) of summer lightning.

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